

Journal of Research Practice
Volume 2, Issue 1, Article M3, 2006



Main Article:

A Continuation of Paul Grobstein's Theory of Science as Story Telling and Story Revising: A Discussion of its Relevance to History

Toni Weller

Department of Information Science, City University, Northampton Square, London EC1V OHB, UK

t.d.weller@city.ac.uk

Abstract

This paper applies Paul Grobstein's theory of science as story telling and story revising to history. The purpose of drawing such links is to show that in our current age when disciplinary borders are becoming increasingly blurred, what may be effective research practice for one discipline, may have some useful insights for another. It argues that what Grobstein advocates for science makes just as much sense for history and that historians have long recognised in their own discipline many of the points Grobstein raises. It examines the changing role of stories dependant upon their cultural context and the emergence of global stories due to advances in technology. Such advances also challenge traditional methods of *telling* the story. It suggests that we may be entering a period which demands a new discourse on the relationship between human knowledge, understanding, and culture.

Keywords: historical method; scientific method; culture; truth; story; subjectivity

Suggested Citation: Weller, T. (2006). A continuation of Paul Grobstein's theory of science as story telling and story revising: A discussion of its relevance to history. *Journal of Research Practice*, 2(1), Article M3. Retrieved [date of access], from <http://jrp.icaap.org/index.php/jrp/article/view/21/67>

Author's Note: For all direct quotes from Grobstein (2005), only page numbers have been cited, corresponding to the PDF version of the article.

In a recent issue of the *Journal of Research Practice* (Volume 1, Issue 1, 2005), Paul Grobstein proposed a new way of viewing science. He argued that science should be considered as story telling and story revising, which creates an interesting twist to the

traditional science/humanities dichotomy. The paper's Popperian approach argues that scientific research should be open to critical examination by everyone, rather than just scientists, allowing for revisions to the accepted truth of the moment. Such an approach can be considered only a positive step at a time when many disciplines are finding themselves questioning their conventional role and ideologies. Globalisation and rapid social and technological change have forced many established disciplines to rethink their traditional research approach, and to challenge the way knowledge is thought of, studied, and communicated in the information age.

The fundamental argument of Grobstein's paper is three-fold: First, that science and culture should be considered complementary forces, not competing ones, and that science should recognise the impact culture has upon it in terms of influencing the theories constructed and the evidence gathered (and vice versa). Second, that there should be a larger role for critical examination of science and scientific theory, that science should not be taught as the truth, but the total sum of knowledge at that particular moment--that is, being able to revise the story. Third, that the traditionally accepted roles of scientist and non-scientist should be challenged (for the purpose of this paper, scientist or science refers to the natural and physical sciences, and non-scientist refers to history or humanities scholars).

As someone who has an academic background in history and information science, Grobstein's paper has a resonance with my own research experiences as a non-scientist. History has been accepted as a story or narrative since Gibbon's *Decline and Fall of the Roman Empire* in the eighteenth century and grand narratives are no less popular in the twenty-first century. For David Starkey, "history, fundamentally, is a branch of storytelling [albeit] a very sophisticated branch of storytelling" (Starkey, 2005). Recently there have been calls from members of the field for there to be a renewed emphasis on story telling within history, on content rather than skills, and for a reconsideration of how history is taught and researched (Friedman, 2005; Starkey, 2005; Stearns, 2005)--in other words, calls to *revise* the story, or the best way of telling it.

Without wishing to get into the somewhat passé debate about whether history is a science or an art, Grobstein's theory suggests some links between history and science which are worth exploring. If science, as Grobstein sees it, is conceived of as "a central component of a human culture" (p. 1), and history is, essentially, the study of past human culture, we begin to see that the two are actually much more closely aligned. Showing science to be a narrative form offers an interesting point for comparing the two disciplines. Further to this, and more significantly, Grobstein suggests that the development of science--what to study, which data to analyze--is much more closely related to contemporary human culture than has previously been recognised (more on this later). For historians, it has long been recognised that the contemporary context influences such decisions in historical research. Grobstein calls for science to recognise its inherent subjectivity and acknowledge to the wider public that science is fallible.

Like history, science is about induction--making general theories from observed data--but it is often presented as being analytically true, when it is not. Historians have long been aware of this subjectivity and have argued, as Grobstein does here, that it is a strength rather than a weakness of research practice. The purpose of drawing such links is to show that in our current age when disciplinary borders are becoming increasingly blurred, what may be effective research practice for one discipline may have some useful insights for another. As Grobstein notes, such a theory will lead to "a very substantial blurring of the borders between those who think of themselves as scientists and those who think of themselves as something else" (p. 2). This paper attempts to provide a non-scientist perspective.

1. The Information Age: A Need for Global Stories?

Grobstein proposes the "rethinking of the role of science in culture and hence of culture itself" (p. 2). In order to do this (and even more so when considering the relevance to history which is irrevocably linked to human culture), we must begin by considering what is deemed to be culturally significant in the twenty-first century. Grobstein does not discuss the implications of the most considerable aspect of contemporary human culture, that is, the period of change and transition in which we are currently living. Technology has advanced hugely in the last few decades, revolutionising communication and knowledge infrastructures. All sorts of socio-economic and political issues have emerged alongside, or as a result of, such new values and ways of living. Traditionally accepted ways of research and thinking of knowledge more generally have been challenged both in terms of methodological practice and relevance of subject matter.

Culture has an influence on both the demands of science and how scientists themselves choose what to research and how to research it. The same is true of history and historians, as in any period of flux there are calls to justify how we arrived here, how the change happened, and these are made richer by a diversity of stories. The type of story currently being demanded is changing within the environment of the information age. Stories of any kind are not, after all, discovered or told within a vacuum, but form part of culture themselves. Just as Grobstein argues that "the evolution of understandings of science is too important to be left solely in the hands of a closed community of scientists" (p. 4), historian Jeremy Black (2005) believes that "the past ... is too valuable to be left to scholars. Instead it provides subjects, themes and evidence" with which humanity can engage and absorb into our culture, as it does science.

However, culture in the information age is no longer restricted to geographic boundaries, and as Jill Vickers has argued, "globalization challenges how academic work is organized" (2003, p. 2), and contributes to the growth in inter-disciplinary research as communication and the sharing of resources and ideas with colleagues around the globe has become radically faster and easier. The role of technology "in reshaping culture and ways of seeing" has been discussed by Rohan McWilliam (2005, p. 19) in a historical capacity, but the same applies to any discipline, as new dialogues and questions about humanity are discussed in broader and more accessible forums. Any opportunity to

present stories which are more inclusive and consider a broader world picture than western Christian civilisation surely has to be a good thing. As traditional geographical and cultural boundaries become less of a barrier, new stories have emerged and thus challenged and revised existing notions of knowledge. The historical trend towards world history for example, shows no signs of slowing, and recently there have been calls for more interaction between established social history and this newer dialogue, both of which “have substantially altered the way the past is defined and the way it is related to the present” (Stearns, 2005).

We have begun, for example, to see new histories on the African poor, on children in Latin America (Hecht, 2002; Iliffe, 1990)--new stories, or revisions to existing ones, in the light of new phenomena and ways of thinking. Such histories surely promote the “less divisive and more widely engaging story” that Grobstein (p. 4) wants for human culture. The fact that more interdisciplinary researchers can access and comment on these histories through e-mail, and Internet discussion forums ensures that they are questioned and challenged, and where necessary, revised. Indeed, “the more people, the more observations, the more stories the better” (p. 11). Admittedly, historical stories are not quite the same as the scientific “summaries of observations” which Grobstein discusses (p. 11), but history (as opposed to the past) is essentially a historian’s concise summary of historical evidence.

Consequently, the idea that the more people contribute the better, holds true whether you are talking about observed data or access to historical material and sources. The easier it is for people to access and share stories of any kind, the richer the material we ultimately have to mine. Leary (2005) discusses how he has used the Internet in his research on the Victorians to facilitate this kind of discussion and he provides an anecdote of how the Internet brought in touch the descendant, biographer, and other scattered family members of the nineteenth century author Letitia Elizabeth Landon. Such story sharing allowed for biographical information to be brought into the public domain for the first time in 170 years. Certainly this is not a unique experience and Leary believes that “fortuitous electronic connections, and the information that circulates through them, are emerging as hallmarks of humanities scholarship in the digital age” (2005, p. 2). The Web and e-mail now allows for story telling, sharing, and revising to take place on a global scale.

This is not restricted to the historical community of course. The wider public can more easily access such stories since they can be disseminated digitally into classrooms or homes, where “the collection of observations and creation of stories in open forums ... can be used and criticized by others” (p. 11). Grobstein quotes from the Serendip forum (a post 9/11 discussion area for “the sharing of thoughts and perspectives about those events and their meaning for our individual and collective lives”) where he suggests that:

Science has the potential to be what we all collectively need as we evolve into a world wide community: a nexus point that encourages and supports the evolution of shared human stories of exploration and growth, an evolution in which all human beings are involved and take pride. (p. 4)

Why should such a community, such shared human stories, be limited and confined to science? Surely this is only promoting the sense of science being “a specialized or privileged activity” (p. 1) that Grobstein criticizes.

Arguably the layman (as opposed to professional) in history plays a more direct role than in science--people are better able to provide historical sources in the form of letters, diaries, pictures, and so forth (as the case of Letitia Elizabeth Langdon illustrates), than they are able to provide scientific evidence or facts. However, the public themselves form part of the culture in which scientists are operating and can directly influence what the scientists pursue (or do not pursue). Consumer purchasing power and public protest plays a key role in the use of animals in scientific testing, for example. The way scientists can use animals has been controlled by legislation in the UK since 1822 and many companies opt for products tested with alternative methods. Many research projects depend on public volunteers providing personal information or being the subject of tests themselves, for their ground data--such as the [Breakthrough Generations](#) project at the Institute of Cancer Research.

The public do play different roles in the shaping of history and of science, but such cultural influences are necessary ones for developing the stories of both disciplines. As has already been argued, the developments in technology and a more global awareness should, if anything, facilitate the sharing of interdisciplinary stories, of stories about humanity--where we have come from, how we got here, as well as where we may be going.

2. Scientific Method versus Historical Method

For Grobstein, a scientific hypothesis:

is nothing more (and nothing less) than a *useful way to summarize observations* ... More importantly, it characterizes the observations in terms of some underlying pattern of principle that yields to predictions about future observations. In this very real sense, the summary is a story-- a way to make sense of observations made to date that provide a guide for future behaviour. And like all stories, it is inherently provisional. (p. 6)

Thinking of historical theory as “a useful way to summarize observations” is equally valid as when applied to scientific theory. Fundamentally, *the past* is gone and irretrievable, but *history* is a historian’s interpretation of contemporary sources and empirical data. It would be impossible for anyone to know everything about what has happened in humanity’s past and so historians summarise and interpret only a small part of the whole, which is constantly open to revision. Collectively, they contribute to, and form, a dynamic human history.

However, history does not attempt to *predict* the future and indeed there are very real dangers associated with using historical consciousness in this way. Christopher Andrew

has argued the danger of military intelligence attitudes of the post 9/11 era is its tendency to rely on short term historical trends to explain current terrorist behaviour, rather than realising that fanaticism has very long historical traditions. “Little of real importance about future trends ... can be deduced from the study of a mere generation of human experience” (Andrew, 2004), instead, one needs to be aware of older trends, or stories. While such stories can be used in attempts to understand the present, they can also be misused, or only part of the story told. Historian Jeremy Black suggests that a partisan view of history is too often used by “polemicists, many of whom are involved in myth-making.” He gives the example of attempts to create a new story of European identity in order to promote the European Union (Black, 2005)--historical stories with a political agenda, selective of the history used in their cause.

Few professional historians attempt to predict events in the future in this way. History is unlike science in that no set of historical conditions can ever be replicated exactly--in many situations, we are not even certain of what those conditions actually were; it is the job of the historian to understand and uncover as best one can. Historians cannot predict future events, but they can philosophise about where humanity might be heading. History is more suited to philosophical and ideological prediction, such as Marxist ideals of classlessness, or Fukuyama’s end of history position that globalisation has caused such a decline in cultural barriers that any future events will be perfectly understood within our existing framework of understanding (Fukuyama, 1992).

However, one of history’s greatest strengths is that we can extract patterns and themes from the past to try to explain contemporary human behaviour or cultural climate, or in order to learn from the mistakes (or successes) of the past. In doing so, we add to the bigger story of human development. Revising the story for each generation is part of the process of our understanding. The emergence of information history and digital history in the last decade, for example, has to a great extent been down to a reinterpretation of history, based upon the contemporary values and concerns of the information society (Black, 1998; Weller, 2005). Alternatively, Hugh Small’s (1998) book used letters by Florence Nightingale, which had been previously unseen by her biographers, to challenge the accepted explanations for her attitude towards sanitation reform. In both these examples, parts of the historical story have been revised by the kind of “critical examination of our understandings” that Grobstein advocates in science (p. 2).

Both scientific and historical method examine evidence (in whatever form) so as to be “a continual and recursive process of story testing” (p. 6). Neither can validate universal claims of knowledge in the Popperian sense, and both can have theories or hypotheses overturned by new evidence. Scientific method is based upon controlled observation, whereas historical method is based upon more subjective and personal interpretations of historical sources, and yet, as Grobstein argues, the choices behind what scientists observe and what they deem as relevant are just as subjective. Evidence--scientific data or historical sources--is valueless until it is interpreted.

That is not to say the results of such inquiry are any less valid, as “issues of evidence, issues of critical analysis, issues of debate” are crucial to practicing good history (Starkey, 2005). Historical subjectivity and analysis is paralleled by what Grobstein terms the “crack” in scientific method:

There is always more than one possible summary/story that will fit any given set of observations ... And so there is always a choice (conscious or unconscious) to further pursue one or another way of several alternative ways of making sense of the world. It is through this *crack* that science is perhaps most strongly affected by the individual temperament and cultural background of its practitioners. (p. 7)

Scientific paradigms are commonly regarded as being less subjective than historical theories. Grobstein acknowledges that there are measurable ways to reduce subjectivity in science, and yet there is no escaping the fact that scientists are not acting within a vacuum--they form part of humanity, and consequently science itself develops as part of a broader human culture and not as an independent entity. Grobstein argues that “as science evolves, it is entering realms where human perspectives ... appear increasingly to be unavoidably (and perhaps even desirably) intertwined with much of what is being explored” (p. 12). In other words, when Grobstein comments, “what is being tested in scientific method is necessarily not only the nature of things being investigated but also the stories chosen to further investigate them” (p. 7), he is essentially making the same point about scientists as historians have long accepted about themselves: that you are a product of your own society and this will always influence what you chose to research and how you chose to research it, irrelevant of the story itself.

The emergence of digital history and information history in the last decade is a good example of such an influence. It is no coincidence that these new interpretations or stories have appeared at the same time as digital and information technologies have become increasingly immersed in everyday life. The dominant themes of the information age have led to a revising of existing historical stories, in much the same way that the rise of the civil rights and feminist movements were in some degree mirrored by revisions to historical understanding by historians’ interest in minority and women’s histories (Weller, 2005). Jon Agar and Edward Higgs have recently published histories of the Government Machine and the Information State, which are essentially revisions of stories on the role central government plays (or should not play) in the collection of data on its citizens in the light of contemporary concerns over ID cards, data protection, and public surveillance (Agar, 2003; Higgs, 2004). Revisions have also been made to stories discussing the role and conceptualisation of information and knowledge in society, as these themes have become more prominent in everyday culture (Black, 1995, 1998; Burke, 2004; Weller & Bawden, in press).

Therefore, subjectivity (or, the crack as Grobstein describes it) can be viewed as a positive generator of new observations and new stories by examining contemporary cultural values and behaviour. Indeed, within the discipline, a historian’s perspective is

not regarded as a limit to their objectivity, but instead, it can be seen as a positive--a way of distancing oneself from the period or issues in question and adding something new from another perspective.

The term *crack* is also used in a similar way to Grobstein by Keith Jenkins in his seminal book *Re-thinking History*:

Querying the notion of the historian's truth, pointing to the variable facticity of facts, insisting that historians write the past from ideological positions, stressing that history is a written discourse as liable to deconstruction as any other ... all these things destabilize the past and fracture it, so that, in the cracks opened up, new histories can be made. (Jenkins, 1991, p. 66)

The concept of the crack, of subjectivity, of context affecting interpretation, whether in historical or scientific method, all support the idea that there is more than one story of human culture, none of which is constrained by disciplinary boundaries or scholarly communities, which seems to be the very point Grobstein is trying to make.

However, just because there is more than one story does not mean that every story is equally valid. There is an important issue of whether all theories deserve equal credence and whether all people are suited to tell stories, or challenge them. Grobstein does not address this question, seeming to support the idea that the opinion of the layman is as valid to scientific development as those of trained scientists. He suggests that science as story telling:

can and should be an activity in which all human beings are engaged in one way or another ... stories that draw from the observations and stories of all humans, and are both useful for and challengeable by all. (p. 13)

This is not a convincing case as it does not take into consideration media manipulation, personal and political motives, or intentional misuse of evidence (such as the examples of military intelligence and European polemicists discussed above). Recent debates about the validity of "intelligent design" as a scientific hypothesis concerning the origin of life, has led in particular to a debate about what makes a credible scientific theory and on the other hand what is more a case of popular propaganda or pressure (Dawkins & Coyne, 2005). In itself, the emergence of this debate at a time when the articulation of religious views is particularly sensitive is a good example of contemporary culture impacting upon the issues scientists choose as relevant and important to discuss. The fundamental point that Dawkins and Coyne are arguing is that, for any theory you need to be able to offer positive proof to support it, as opposed to simply pointing out the gaps in another.

When applied to history, the same questions of equal validity arise. How are historical stories evaluated so that some are deemed acceptable, and others not? Can one give equal credence to the arguments of holocaust deniers, for example? Holocaust expert Deborah

Lipstadt exposed Holocaust denier David Irving as deliberately manipulating historical evidence in order to refute that the Holocaust happened and to advance his anti-Semitic and white supremacist ideology. In 2000, Irving took her to court for libel although ultimately the judge ruled against him. The case showed the danger of distorting history to suit contemporary culture and personal subjectivity--in this case twentieth-century history in order to promote twenty first-century anti-Semitism and white supremacism. It also reinforced the importance of scholarship in sustaining historical truth. Some stories, therefore, can be unacceptable.

To ensure valid and acceptable historical stories, research must be rigorous in its methodology, that is, internally coherent and consistent. It must also ensure that the evidence used have been checked back to their original sources and that any bias or ideological stance of the author (or indeed, the historian) has been acknowledged--as is argued here, subjectivity is not a negative thing in history, but a worldview must be stated. Any argument must be self-referencing, it must show where it fits into the existing literature, the accepted body of stories. Evidence must not be wilfully ignored, but explored and challenged and, if necessary, revisions must be made to stories in order to accommodate it. These criteria are neither formal nor exhaustive, yet they indicate how one historical story may be judged more acceptable than others. Issues of methodology are more crucial in history, since the critical analysis and interpretation of one historian is no more or less true than any another interpretation.

This of course begs the question--what is truth, and what role does it play in history? Professional historians must of course endeavour to be accurate in their use of evidence, to ensure the provenance of material, and not be intentionally blind to sources which challenge their argument. But beyond these immediate concerns which give both the profession and historical research authority, truth is an ideological concept which itself changes depending on the cultural context--this idea is brilliantly articulated by Keith Jenkins in *Re-thinking History* (1991, pp. 28-32). Therefore, there are multiple truths according to your worldview and the way you choose to interpret, or place importance upon, particular sources. Grobstein himself recognises that his argument "derives in significant ways from aspects of my particular personality and of the particular cultural context in which I work. ... A different person, in a different time and place, might well tell a different story" (p. 14). History, as with Grobstein's view of science, is made up of multiple truths. These truths, or stories, engage with the culture in which they are immersed at any one moment in time, all of which are susceptible to change, challenge, and revision.

A further distinction can be made between the manner in which such revisions occur in history and in science. Historical revisions are more spatial and spontaneous than scientific ones, which tend to follow a more linear and temporal development. To contextualise this further, the Irish Republican Army (IRA) and their historical predecessors Young Ireland, the Irish Republican Brotherhood, and the Fenians, have had differing stories in Ireland, England, and America, according to opposing moral and religious perspectives and sympathies. In some stories they appear as terrorists, in others,

freedom fighters. Each of these perspectives is equally valid (or invalid)--none can be proven correct or absolute. Revisions to the story have occurred recently in America, which has traditionally been sympathetic to the Irish cause. Post 9/11, perspectives changed as domestic terrorism took on a new cultural meaning. The revision occurred within an extremely short period of time, considering the story has otherwise been constant in the US since the mid-nineteenth century. However, the stories of Irish nationalism in England and Ireland were not really affected by the 9/11 attacks. Here science does differ from history. Challenges and revisions to long-accepted scientific paradigms do not tend to occur with such spatial variations. Kuhnian paradigm shifts (Kuhn, 1962), in their very nature, must affect the whole global community of scientists in order to be accepted as a revision to the story. Of course, this distinction is not absolute either, since historical revisions may also be linear. After all, historiography itself is in essence a linear progression of historical thought.

Therefore, for history as for science, “without falsifying observations, stories would become static” (p. 6). Historical theories cannot be tested in the same way as scientific ones because events can never be recreated in exactly the same way, but they can be supported or challenged by the use of new historical evidence, or new ways of looking at existing evidence. While challenges to accepted views are unlikely to be replaced by a “better” story, as Grobstein suggests in scientific method (p. 6), as all historical stories are by their very nature somewhat subjective interpretations, revisions to the existing stories can, and do, result in more detailed understanding, alternative viewpoints, and new perspectives. The revision of historical stories leads to an alternative story, not necessarily a better one. And in any case, what one culture deems as useful and valid, another may not: stories are relative to the context in which they are being understood. However, whether the story under revision is historical or scientific, ultimately both become richer on account of “a progressively increasing number of observations, including ones that were adequately accounted for by a previous story and new ones that weren’t” (p. 7). The more facts, data, or evidence available, the more varied the ideas and conclusions become--although the process can be lengthy because “men are as much ‘victims’ of their ideas as beneficiaries of them; traditions prevent men from seeing ... phenomena that an alternative tradition might lead them to confront” (Hollinger, 1980, p. 201).

3. Public Stories and Popular History

Discussing science as a story allows for an increased public awareness and involvement with science, and helps dispel the fallacy that science is only for an elite group of men in white coats. For Grobstein, rousing curiosity and scepticism in a wider audience is the best way to engage with the world around us; for him, story telling allows new perceptions to emerge, new questions to be asked, and for knowledge to be more readily shared. There is much strength in this argument, especially as the technology around us continues to make it possible to share information and exchange ideas with colleagues or strangers across the world. The more people have the interest and ability to question and challenge scientific story, the faster (and “better”) the story can be revised.

These ideas can be equally applied to historical enquiry. Popular history has gained momentum in recent years with a growth in television documentaries and books making our past more accessible to the general public. The decision to make London museums free to enter and the utilisation of the Internet for virtual experiences, online resources, and discussion forums has also helped bring history closer to the general public awareness and experience. Digital technologies have not only opened up new fields of research questions, but they have also begun to change the practical ways in which history is taught and researched. Boonstra and others have looked at “historical information science,” in which “the object ... is historical information, and the various ways to create, design, enrich, edit, retrieve, analyse and present historical information with help of information technology” (Boonstra, Breure, & Doorn, 2004, p. 10). Patrick Leary (2005) has discussed the pros and cons for the historian in using the Internet as a research tool. Robertson (2004) and Friedman (2005) have observed the implications of using digital media to teach history in new and engaging ways, ranging from the use of computer-assisted presentation tools and visual information in the classroom to support traditional history lectures, to Robertson’s conception of “hypertext history,” in which Web-based technology is used to create an entirely new virtual historical experience.

While anyone who practices history needs to have an ability to understand complex historical context, to be able to argue and weigh up evidence, and to think critically, these technological developments undoubtedly suggest new *methods* of telling historical stories. In this case, the *way* in which the story is being told is revised, rather than the *content* (or theory) of the story itself. Grobstein makes this point for scientific enquiry when he discusses E. O. Wilson’s concept that “the world is orderly and can be explained by a small number of natural laws” (as cited in Grobstein, 2005, p. 10):

... it is a story telling style, one of many. Science should never become an advocate either of a particular story about things it is exploring or of any particular *form of exploration*. (p. 12)

The power of science, or history, does not lie in any one form or method of story telling, but since “the underlying principle of skepticism, of continually questioning both stories and the styles in which they are told” (p. 12) is in essence formed and strengthened by the revision of stories, then multiple and *new* ways of telling any story is something that should be encouraged. Indeed, his recognition that scientific truth can, in effect, be no more absolute than historical truth leads to the conclusion that scientists need to embrace a diversity of stories, “to the view from *everywhere*, to stories that make most sense of the widest array of observations and stories made from unique and different perspectives” (p. 12). This is exactly what history has always striven towards.

It has been argued here that the concept of human culture as an ongoing process of story telling and story revising is one that makes particular sense in the twenty-first century, as traditional geographic, cultural, and disciplinary boundaries grow weaker. While recognising that science and history are not the same, and necessarily so, there is much to be said for a common ideology of sharing and revising knowledge in order to support the

evolution of a richer, and more diverse, human culture and understanding about ourselves. The theory of story telling and story revising, whether scientific or historical, seems a positive step in this direction. This paper has attempted to offer an alternative story to that proposed by Grobstein, revising his story in the light of my historical knowledge. If these two stories can be considered a beginning to encourage others, perhaps a new discourse on the relationship between human knowledge, understanding, and culture can begin to be told.

Acknowledgements

The author would like to thank six anonymous referees whose suggestions and engagement with the piece consequently made the central arguments much richer--particularly the suggestion that scientific revisions are linear, while historical revisions are spatial. Thanks must also go to Madeleine Gabriel for her insightful comments and discussions over drafts of this paper which greatly improved the end result. I am also grateful to the co-editors of the *Journal of Research Practice* for their enthusiasm towards publication of this article.

References

Agar, J. (2003). *The government machine: A revolutionary history of the computer*. London & Cambridge, MA: MIT Press.

Andrew, C. (2004, June). Intelligence analysis needs to look backwards before looking forward. *History & Policy*. Retrieved November 14, 2005, from <http://www.historyandpolicy.org/archive/policy-paper-23.html>

Black, A. (1995). New methodologies in library history: A manifesto for the 'new' library history. *Library History*, 11, 76-85.

Black, A. (1998). Information and modernity: The history of information and the eclipse of library history. *Library History*, 14(1), 39-45.

Black, J. (2005). History is being used to force a European identity. *BBC History Magazine*, 6(10), 37.

Boonstra, O., Breure, L., & Doorn, P. (2004). *Past, present and future of historical information science*. Amsterdam: Netherlands Institute for Scientific Information and Royal Netherlands Academy of Arts and Sciences. Retrieved February 17, 2006, from http://www.niwi.knaw.nl/en/geschiedenis/medewerkers/peter_doorn_home_page/new_0_copy1/past_present_future_of_historical_information_science/new/ Published earlier in 2004, *Historical Social Research / Historische Sozialforschung*, 29(2), 4-132.

Burke, P. (2004). *A social history of knowledge: From Gutenberg to Diderot*. Cambridge: Polity Press.

Dawkins, R., & Coyne, J. (2005, September 1). One side can be wrong. *The Guardian: Education*. Retrieved November 14, 2005, from <http://education.guardian.co.uk/print/0,3858,5274569-108233,00.html>

Friedman, A. (2005). Using digital primary sources to teach world history and world geography: Practices, promises, and provisos. *Journal of the Association for History and Computing*, 3(1). Retrieved November 14, 2005, from <http://mcel.pacificu.edu/jahc/JAHCVIII1/articles/friedman.htm>

Fukuyama, F. (1992). *The end of history and the last man*. New York: Avon Books.

Grobstein, P. (2005). Revisiting science in culture: Science as story telling and story revisiting. *Journal of Research Practice*, 1(1), 1-18. Retrieved November 14, 2005, from <http://jrp.icaap.org/index.php/jrp/article/view/9/17>

Hecht, T. (Ed.). (2002). *Minor omissions: Children in Latin American history and society*. Madison: University of Wisconsin Press.

Higgs, E. (2004). *The information state in England: The central collection of information on citizens since 1500*. Basingstoke: Palgrave Macmillan.

Hollinger, D. (1980). T. S. Kuhn's theory of science and its implications for history. In G. Gutting (Ed.), *Paradigm revolutions: Applications and appraisals of Thomas Kuhn's philosophy of science* (pp. 195-222). London: Notre Dame.

Iliffe, J. (1990). *The African poor: A history*. Cambridge: Cambridge University Press.

Jenkins, K. (1991). *Re-thinking history*. London & New York: Routledge,

Kuhn, T. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Leary, P. (2005). Googling the Victorians. *Journal of Victorian Culture*, 10(1), 72-86.

McWilliam, R. (2005). What is interdisciplinary about Victorian history today? In *Interdisciplinary Studies in the Long Nineteenth Century*, 1. Retrieved November 14, 2005, from <http://www.19.bbk.ac.uk/Issue1articles/RohanMcWilliamarticle.pdf>

Robertson, S. (2004). Doing history in hypertext. *Journal of the Association for History and Computing*, 7(2). Retrieved November 14, 2005, from <http://mcel.pacificu.edu/JAHC/JAHCVII2/ARTICLES/robertson/robertson.html>

Small, H. (1998). *Florence Nightingale: Avenging angel*. London: Constable.

Starkey, D. (2005). What history should we be teaching in Britain in the 21st century? Plenary lecture at the conference on *History in British Education* (Institute of Historical Research, London, 14-15 February 2005). Retrieved November 14, 2005, from <http://www.history.ac.uk/education/conference/starkey.html>

Stearns, P. (2005). Social history and world history: Towards greater interaction. *World History Connected*, 2(2). Retrieved November 14, 2005, from <http://worldhistoryconnected.press.uiuc.edu/2.2/stearns.html>

Vickers, J. (2003). Diversity, globalization, and “growing up digital”: Navigating interdisciplinary in the twenty-first century. *History of Intellectual Culture*, 3(1). Retrieved November 14, 2005, from <http://www.ucalgary.ca/hic/website/2003vol3no1/framesets/2003vol3no1vickersarticleframeset.htm>

Weller, T. (2005). A new approach: The arrival of informational history. In *Proceedings of the XVI international conference of the Association for History and Computing* (pp. 273-278). Amsterdam: Royal Netherlands Academy of Arts and Sciences.

Weller, T., & Bawden, D. (in press). Individual perceptions: A new chapter on Victorian information history. *Library History*.

Received 15 November 2005

Accepted 8 February 2006

[Copyright © 2006 Journal of Research Practice and the author](#)